IV

And Now for Something Completely Indifferent . . .

". . . you reach down, you flip the tortoise over on its back."

In a walnutshell:

The Limits to Growth v The Limits of Growth >
Humility v Hubris >
Global Warming v Global Warmongering >
The Abyss v The Abysmal >
Comedy v Tragedy >
Burst Bubbles

Fig. 8: Anthony Schongauer, *The Temptation of St. Anthony*, c. 1470–1475.

The Immortal Game

> If we are indeed teetering on the edge of a massive change in how we live, in how human society itself is constructed, and in how we relate to the rest of the world, then we were led to this point by the stories we have told ourselves – above all, by the story of civilisation . . . What makes this story so dangerous is that, for the most part, we have forgotten that it is a story. It has been told so many times by those who see themselves as rationalists, even scientists; heirs to the Enlightenment's legacy – a legacy which includes the denial of the role of stories in making the world.
> – Paul Kingsnorth and Dougald Hine, *Uncivilization: The Dark Mountain Manifesto* (2009)[135]

When Charlie Chaplin danced atop his desk as *The Great Dictator*, he threw a plastic inflated sphere-of-earth into the air in a song-and-dance routine of a tyrant reigning over the world as if it were his oyster.[136] The joke fell heavy on Chaplin's contemporaneous audience, laughing, as it were, at a comedian satirising Hitler while World War Two played out in the background. The target of Chaplin's satire is as unsubtle as it is perturbing, but it misses the joke about how such tyranny ultimately acquiesces to, rather than circumvents, the vicissitudes of the cosmos.

True that tyranny posed an ever-imminent existential threat in both the subject of the film, as well as its 1940 time of creation, and that both the subject and the time were palpably dire. True that tyrants have been reigning with such flagrant disregard for life and limb since well before Queen Mary Tudor, but the publicity still for Chaplin's tragicomedy captures a deeper truth that transcends the all-too-human focus of the film. Facing down the inflatable sphere as if it were a *Melancholia* approaching earTheia, his eyes happen to gaze directly at the map of Panama on the sphere, the site of the planet-altering rise of the Panama Isthmus and, there in the coast off Mexico, also the site where Chicxulub made landfall. In satirising the human-scale catastrophe of war that had thrown the whole world into panic, Chaplin gazed, just for a moment, straight at what an actual rupture on the planetary scale looks like.

The "upstream cataclysm" by way of the Panama Isthmus closure and all its cascading consequences, or Chicxulub's descent in one fell swoop, speak to that which a dire demeanour ultimately denies, too preoccupied at it were with being petrified about human-scale disasters that threaten the social limits to life. Chaplin is not only looking at a political map that has divvied the earth into named territories, but one which has no vertical or voluminous dimension: a caricature

135 Paul Kingsnorth and Dougald Hine, *Uncivilisation: The Dark Mountain Manifesto* (Oxford: Dark Mountain Books, 2009), 10.

136 Charlie Chaplin, director, *The Great Dictator* (United Artists, 1940), 35 mm.

of the planet touted by those who proclaim "My name is Ozymandias, king of kings/Look on my works, ye Mighty, and despair!"[137]

Tyranny and the ceaseless wars it spawns in order to define which parts of the world fly under what tribal flags may seem all-consumingly dire. But the social limits to life, no matter how punitive and despotic, are ultimately only a subset of the biophysical limits to life. Social limits may confront us daily and seem to command an unflinching response from us: we stare them down in order to comprehend them, but this is a worldview that misses the joke entirely. As Paul Kingsnorth and Dougald Hine lament, "the story of civilisation" is precisely "so dangerous" because "for the most part, we have forgotten that it is a story."

Act II: the Dire is the song-and-dance routine of remembering that civilisation *is* just a story. It deals with both that coming of age, and our coming to terms with coming of age in the moment when "the story of civilisation" becomes comprehended for what it is (a story) and civilisation becomes comprehended for what it is (a myth). The moment when the social limits to life that dominate a dire demeanour prostrate themselves before the biophysical limits to life that they were always beholden too to begin with. And to end with.

To sing the song of how the universal sigh acquired a distinctly human twist is to stare unflinchingly at this "pretty bleak" picture, composed as it is of us flipping the desert tortoise and making an earTheia that was already dour (unfathomably changeable, chaotic, and unknowable) dire to boot. The present tense finds us standing smack bang in the middle of an audience being told, as the dinosaurs gathered before Stegosaurus were, that the picture really is "pretty bleak": after all, the composition in question paints us out of the picture altogether, just as Chicxulub did for Stegosaurus' dinosaur audience. Then, the joke was on them. Now, the joke falls on us, though we are both the joke and the butt of it to boot.

This human twist to the tale tells of how the third and first parts of the universal sigh came to reveal just how dire the present tense is. First, through a sigh of comprehension, when our brain "about the size of a walnut" cracked open to the fact that the current destabilisation of the world's climates was due to the consequences of human industrial activity. In this inhalation and exhalation of the universal sigh, though, the walnut-crack differs from the Stegosaurus' lament that "the mammals are taking over," because this time around one mammal has called game over for all and sundry.

The Dire is a posture that pits our walnut shell against the World Turtle in order to unfurl this human twist from the universal sigh. It is what happens when you not only reach down and "flip the tortoise over on its back," but when

137 Shelley, "Ozymandias."

you also comprehend that you flipped it, and with it, the World Turtle, amidst all manner of dour changeability and dire consequences for the more-than-human world. The Dire adds insult to the injurious revelations of The Dour, making it a *post*cautionary tale for three blind mice who come to realise *they* enraged an entity that they now cower before, and also realise rather too late that a *pre*cautionary principle must have passed them by-the-by.

That precautionary principle is then replaced by a worldview of human-caused problems begetting human-caused solutions: rather than the principle forsaken by the blind mice, this offers a ludicrous *pre*cautionary tale for a *post*cautionary crisis. As Wendell Berry cautioned in 1983, it is

> always the assumption . . . that we can first set demons at large and then, somehow, become smart enough to control them. This is not childishness. It is not even 'human weakness.' It is a kind of idiocy, but perhaps we will not cope with it and save ourselves until we regain the sense to call it evil.[138]

Whereas climatologist Wallace Broecker put it even more bluntly, way back in 1987: "if you're living with an angry beast, you shouldn't poke it with a sharp stick."[139] Having unleashed Frankenstein's monster or Tyrell's replicant minions, the Dire chooses to misconstrue the truth of the situation, proposing to make a home on earTheia by playing house alongside these new bedfellows we created and the old bedfellows who evolved alongside us and are now dying in multitudes by our hand.

While the Dour celebrates how the universe is rife with its own demons, whether the 'angry beast' that is the intrinsic volatility of the climate, the Court Jester or Red Queen dancing aboard the chessboard of evolutionary mechanics, or any number of any number of Chicxulubs, the Dire and the Dice prefer to avoid looking at such naked truths. All three postures lament that civilisation so-called has poked the angry beast with a sharp stick, so that we quiver now like the three blinded mice in anticipation of our comeuppance. Though only the Dire and the Dice seek means to contain this beast or demon. The former believes it can placate the angry beast with soothing words, using the slow vocabulary of global environmental policy and governance. The latter wants to coax the demon back into a vessel of containment, by manipulating the biophysical environment itself, as if the demons can either be coaxed back inside earth, or exorcised out of the atmosphere through an uncorked hole in the sky that dissipates excess heat.

138 Wendell Berry, *Standing by Words* (San Francisco: North Point Press, 1983), 65.

139 Wallace Broecker, "Unpleasant Surprises in the Greenhouse?" *Nature* 328, no. 6126 (1987): 124.

While a dour demeanour is premised on fidelity to the full gamut of cosmic changeability and its consequences, a dire or dice demeanour seeks to wager with this premise, assuming we can "become smart enough to control" the demons. Meanwhile the Dour just continues to exhale and inhale the universal sigh in spades, because it refuses to endorse either posture *per se*, finding any and all to be nothing but empty gestures. Nor does it find any favour in the slimmest prospect of their success, resulting in a *Blade Runner* world of human survival on a ravaged planet filled with artificial animals to replace those that humans drove to extinction.

But the devil, as they say, is in the details, and this even applies to "demons at large." Here, all the heady, intellectualising pontification of the Dour gives way to everyday experiences of the now, or at least living memory. If the Dour is the subtle details of the cosmos on phenomena largely imperceptible to our myopic sensibilities, the Dire is the blunt force trauma of everyday Western urban life, where the cosmos has appeared to fade into the obscurity of light pollution, amidst lives in all-too-human-dominated anthromes, meaning biomes where anthropos now dominates an ecosystem. And from these living and recently-lived moments the Dire's purview of the social limits to life is folded into the biophysical limits to life, the dominion of the Dour. The plastic earth sphere in Chaplin's tragicomedy of *The Great Dictator* is folded into the actual earth that it purports to map.

In Part IV the lived experiences that flesh out the Dire (not to mention the devil that lives within them) are set within New York City. The Big Apple makes for a telling stage for the story of how we wound up in the desert and flipped the tortoise. There in Manhattan we find our feet, aided by three stories that share the idea of a bubble: one tale of audacious architecture, another of nuclear holocaust satire, and finally, a sacrilegious situation comedy. Each vignette opens up part of the portal to how the tortoise got flipped, using the city which stands as the epicentre of capitalism as a stand-in manifestation of the flipping.

Together these Manhattan stories reveal how our present tense world came to be turned upside down over the course of three successive generations, represented by an architect/designer/engineer/inventor, a filmmaker, and a comedian (all white, all male, and all American, in keeping with the usual suspects for catalysing the rupture). Starting with architecture to encase the city in a glass bubble; onwards ever on war towards to a film that eviscerates a bomb capable of obliterating the bubble and with it, the world; and ending with a 1990s sitcom about a society that intelligently and deliberately forgot that an earth exists outside the intoxicating bubble of its narcissism.

These stories tease the demon out from its bubbles of containment, each by unearthing something about the sky: things that come from and are put into the sky, things that fall from the sky, and finally, how the demon's escape into the sky

has transformed the atmosphere not only in the here and now, but also in time stretching far beyond the event horizon.

Just as the sky is the melting pot and the meeting point between local actions and global consequences, and between now and forever, Part V takes leave of the US, to consider global responses to the World Turtle once its flipping became a worldwide affair. Therein recounting attempts to "become smart enough to control the"[140] demons by word and deed, that is through international climate and environmental policy. Wherein the attempt to outwit the World Turtle via the third part of the universal sigh finds its full expression, riding up against the limits ushered in when Stegosaurus says "we all have a brain about the size of a [rockmelon, née] walnut." This expression has telling repercussions for those who marry their comprehension of the world with a desire to intentionally shape its changeability.

Having thus established that the *we* concerned encompasses all solar subservient lifeforms on earth, the final Part VI of Act II: the Dire re-visits the social and biophysical limits to life, this time in a biosphere rendered precarious by civilisation so-called. Collectively, Act II charts the journey from Accident (we did not know what we were doing but we did it anyway); to Intention (we knew what we were doing and we did it anyway); and grappling with Intervention (we do not know what we are doing but we want to do it anyway). To begin in Manhattan, though, we must first find the demon contained (literally) in a bottle across the pond in England, with a microcosmic earth-within-a-house-built-upon-the-earth . . .

Life in a Glass Greenhouse

> We are passing through a unique phase of human history when, for the first time ever, we consciously connect events that happen on vast, geological scales – such as changes to the whole climate system of the planet – with what we might do in the everyday lives of individuals, collectivities, institutions, and nations.
> – Dipesh Chakrabarty, "Anthropocene Time" (2018)[141]

> Events, we might say, are temporizing: they provide or give the experience of passing time . . . In this way, time – and the processes of becoming that are inherent to temporization – also involve a kind of violation: a rupture with preexisting states of affairs, pathways whose opening precludes other trajectories. If this intrinsic violence is constantly enacted in the minor but consequential durations of daily life, it can be truly cataclysmic once we scale up to

140 Berry, *Standing by Words*, 65.
141 Dipesh Chakrabarty, "Anthropocene Time," *History and Theory* 57, no. 1 (2018): 6.

> the times and spaces of the Earth . . . That we experience eventful time as erupting, irrupting, interrupting suggests memories of those ruptures that our planet delivers now and again.
> – Nigel Clark, Alexandra Gormally, and Hugh Tuffen, "Speculative Volcanology: Time, Becoming, and Violence in Encounters with Magma" (2018)[142]

On 17 April 1960 an electrical engineer and gardening enthusiast named David Latimer made a Do-It-Yourself terrarium for his home in Lancashire, England. He placed soil, water, and four plant species inside a ten-gallon glass sphere, which became a Closed Ecological System once he fastened a customised cork plug in the sole opening. It transpired that of the four plants, only the spiderwort could survive in the sealed bubble, giving it a monopoly for expanding into newly available ecological niches.

Latimer's notionally self-sustaining terrarium scales down planetary limits to life to "the everyday lives of individuals" during a time that Chakrabarty terms "a unique phase of human history." The limits reveal themselves in the domestic sphere of Latimer's terrarium because, as its creator remarks, "it is the definition of low-maintenance. I have never pruned it; it just seems to have grown to the limits of the bottle."[143] Yet the more pressing limits to growth, and thus limits to life, are not those imposed by the bottle, but those posed by matter and energy circulation at play in this microcosmic earth-within-a-house-built-upon-the-earth.

Having expanded to reach along the inside perimeter, spiderwort growth becomes limited by the supply of carbon dioxide emitted by soil bacteria as they break down oxygen emitted by living and composting leaves. Material exchanges are looping circuits between soil (as lithosphere), water (as hydrosphere), and air (as atmosphere). Circuitous exchanges between these spheres mean that growth by the living is conditional on myriad trade-offs with the non-living, and vice-versa. For the spiderwort, this means growth cannot outpace those nutrients, water, and gasses on offer in the surrounding litho/hydro/atmo–spheres.

Inside any closed system, whether Haacke's *Condensation Cube* or Latimer's terrarium, no additional water or oxygen can be created beyond that which was present at the moment the system was sealed. Except that including life within a closed system means that abiotic components may vary in volume via metabolic conversion, as bacteria and plant do. The spiderwort's growth in Latimer's closed system thus faces a host of limits, as do the bacteria, soil, water, and air.

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142 Nigel Clark, Alexandra Gormally, and Hugh Tuffen, "Speculative Volcanology: Time, Becoming, and Violence in Encounters with Magma," *Environmental Humanities* 10, no. 1 (2018): 276.

143 Laurie Balbo, "50 Year Old Record-Busting Bottled Terrarium – And It's Not from Dubai!", *Green Prophet*, 29 May 2013, accessed 16 June 2016, http://www.greenprophet.com/2013/05/terrarium-david-latimer.

The energetic realm poses distinctly different limits to growth, because solar radiant energy passes through the sphere's membrane, whereas matter cannot. Incoming solar radiation is not a circuit of trade-offs like the material realm, but an incessant irruption from the world outside the sphere, to the world within. At play here is a microcosm of earth with its intrinsic circulations of living-to-non-living-matter-and-back-again, as well as its extrinsic entanglements with stellar energies.

Entering a house as sunlight, a stellar dimension streams through the membrane of a lounge room window, making the terrarium a microcosm of how Closed Ecological Systems are incessantly open to energetic flows from the cosmos. Just as a pebble thrown across the lounge room would bounce off the glass sphere, whereas a brick would shatter it into an Open Ecological System, so too does earth's atmosphere prevent material intrusions, unless they are so large as to penetrate the planet's membrane. Were a J002E3-sized object to make a straight course for terrestrial impact, it would disintegrate via atmospheric friction, whereas a Chicxulub would make it to (and through) the terrestrial surface.

Growth, and its limits, bring these entanglements to the fore: of energy disequilibrium between a sphere-as-container and that-which-it-is-contained-within, whether bubbles planetary or domestic. For Bataille, these entanglements express his second "Law of General Economy," titled "The Limits of Growth":

> Life suffocates within limits that are too close; it aspires in manifold ways to an impossible growth; it releases a steady flow of excess resources, possibly involving large squandering of energy. The limit of growth being reached, life, without being in a closed container, at least enters into ebullition: without exploding, its extreme exuberance pours out in a movement always bordering on explosion.[144]

While Latimer's terrarium renders this palpable, Bataille speaks of the limits of the biosphere – the "closed container" within which life "aspires . . . to an impossible growth."

So far this scenario is merely another manifestation of the Dour – Latimer's terrarium was indeed catalysed by human action, though the experiment presents no demons, as it instead sings of the limits to life in Open versus Closed Ecological Systems. The terrarium can, however, also be seen as a microcosm of the Dire when it is read through the lens of Bataille's work on planetary energy disequilibrium as a by-product of civilisation so-called.

After all, his "Laws of General Economy" herald from *The Accursed Share: An Essay on General Economy*, commenced in 1946 under the shadow of the "extreme exuberance" of the previous year's atom bombs, whose ebullient conversion of

144 Bataille, *The Accursed Share*, 18.

mass to energy indeed poured out in a movement that did not merely border on explosion.

In order to situate the human sciences in their cosmic context, Bataille analysed the political economy and the biosphere in relation to one another. He was, as Nigel Clark remarks, a "prophet of open and complex systems" that "do not settle into an equilibrium state,"[145] such as eviscerating restrictive economics into energetic flows at the "scale of the universe."[146] For Bataille, such openness is here, there, and everywhere our worldview sees fit to comprehend: "What is before me is never anything less than the universe; the universe is not a *thing* and I am not at all mistaken when I see its brilliance in the sun."[147]

Bataille would probably have been less interested in the seeming closure of Latimer's terrarium to the cosmos than he would have been in the ways that it, as synecdoche for life on earth, is periodically ruptured. Twelve years after its 1960 closure the terrarium experienced its first and only such "rupture with pre-existing states of affairs" in Clark, Gormally, and Tuffen's sense of "eventful time as erupting, irrupting, interrupting," when it was momentarily uncorked and watered in 1972, after which it has been kept closed, according to Latimer, "as an experiment."[148] Aside from this one "kind of violation," the only external variables have been exposing different sides to the sun through periodic rotation.

The same cannot be said for the planet on which the terrarium sits, which has experienced an irrevocable "rupture with pre-existing states of affairs." Unlike Latimer's terrarium, which has in effect maintained an energy equilibrium since it was last 'reset' in 1972, earth entered a *New World Coming* in 1971, courtesy of shifting into net positive energy imbalance. Scaling up from Latimer's terrarium to the planet-on-which-it-resides, this momentary "eventful time" palpably illustrates how life's "intrinsic violence . . . can be truly cataclysmic once we scale up to the times and spaces of the Earth."

At play here is the microcosm of Latimer's terrarium and his surrogate orbital spin of the globe, housed within the mesocosm of a domestic lounge room, housed within the macrocosm of the entire planet. All three herald from a cosmos that Bataille preached humility to, especially in dealings with ever incessant excesses of

145 Bataille, *The Accursed Share*, 33.

146 Georges Bataille, quoted in Asger Sorensen, "On a Universal Scale: Economy in Bataille's General Economy," *Philosophy & Social Criticism* 38, no. 2 (2012): 170.

147 Bataille, *The Accursed Share*, 57 (emphasis in original).

148 David Latimer, quoted in David Wilkes, "The Sealed Bottle Garden Still Thriving After 40 Years Without Fresh Air or Water," *Daily Mail Online*, 24 January 2013, accessed 16 June 2016, http://www.dailymail.co.uk/sciencetech/article-2267504/The-sealed-bottle-garden-thriving-40-years-fresh-air-water.html.

solar energy (and in the absence of any leverage over the globe's orbital spin, or a cork to uncork the net positive energy imbalance from the atmosphere).

Latimer practiced the bare minimum of servicing for his microcosm: following planting, no pruning or other material interventions, save for that singular instance of watering in 1972. Bataille preached even less intervention, decrying that any civilisation grappling with solar energy would become tethered to the inherent excesses of cosmic forces. As with the spiderwort, pushing at the limits of its vessel of containment to seek out more sunlight, life on earth is the beneficiary of how the sun "gives without ever receiving"[149] in terms of the solar radiant energy that it rains down, as Bataille gently reminds us.

But there is also an opposing worldview at play here: the dire demeanour, premised on hubris rather than humility when dealing with scarcity and excess. This could apply to the microcosm of Latimer's terrarium, the mesocosm of his lounge room, or the macrocosm of Bataille's cosmos. In all cases, a dire mindset seeks to service the earth as if it were reducible to the elements of Latimer's terrarium. The Dire seeks a measure of control over that which is chaos: not just that which has been rendered chaotic by human industrial activity, but that which is chaotic in-and-of-itself.

This particular demon was set free in the Big Apple via a domestic bubble built to deal with scarcity and excess, as seemingly innocuous as spiderwort making its home in a terrarium. Though in actuality the domestic sphere was a mesocosmic earth-within-a-house-built-upon-the-earth, whose ethos heralds from the Cold War depths of Manhattan Project-inspired weather modification.

The Manhattan Project

> There is no Plan B and the bubble, it turns out, is where we have been living all the while. The bubble is that delusion of isolation under which we have laboured for so long . . . The bubble is civilisation.
> – Paul Kingsnorth and Dougald Hine, *Uncivilisation: The Dark Mountain Manifesto* (2009)[150]

> "Man," I cried, "how ignorant art thou in thy pride of wisdom!"
> – Mary Shelley, *Frankenstein* (1818)[151]

On 19 April 1960, two days after Latimer planted his terrarium, American designer/engineer/inventor Buckminster Fuller installed all the walls and the ceiling

149 Bataille, *The Accursed Share*, 28.
150 Kingsnorth and Hine, *Uncivilisation*, 7.
151 Shelley, *Frankenstein*, 364.

of a home for himself and his wife Anne Fuller in Carbondale, Illinois. The home, his first domestic geodesic dome, was based on a semi-permeable energy-matter membrane between the world-within and the world-without, like Latimer's terrarium. The structure obtained and retained maximal energy efficiency through both this membrane and its spherical shape, as Fuller's overarching design ethos was premised on energy scarcity, not excess.

Fuller's ethos stands in polar opposition to Bataille's "Limits of Growth," regarding the radiant solar energy surfeit in Latimer's terrarium-as-microcosm, or planet-as-macrocosm. Despite being born only two years apart, in 1895 and 1897, Fuller and Bataille viewed the accelerating social, cultural, economic, and technological calamity of the twentieth century in diametrically opposing ways, respectively preaching hubris versus humility, scarcity versus excess, and control versus chaos.

In contrast to Bataille, Fuller advocated for mediating in stellar energetic forces, not only in terms of Fichte's notion of how "we build our houses on the earth" that rests on the World Turtle, but in how "we build . . . the earth" itself. Five months after building his geodesic dome home, Fuller unveiled his most provocative and infamous design for such mediation, created in collaboration with Japanese architect Shoji Sadao. *Dome Over Manhattan* proposed a 3.2-kilometre-wide and 1.6-kilometre-high hemispherical dome to encase the city between the East to the Hudson rivers along the midtown breadth, running from 21st to 64th Street along the peninsula.

Commencing at the height of an average skyscraper and tethered to the ground by cables, the tensegrity structure of wire-reinforced shatterproof glass would have been lighter than surrounding air, making it float skyward due to the push from warmer air within. Energy efficiency was again a dictate, wherein the greenhouse effect would create one uniform microclimate that centrally heated or cooled the entire area inside. Through such a membrane and its spherical shape Fuller laid claim to not only save further energy combustion by obviating all individual building heating and cooling, but to also reduce air pollution in so doing.[152]

Unveiled in the *Visionary Architecture* exhibition at the New York Museum of Modern Art (MOMA) from 29 September to 4 December 1960, the work was represented by aerial photographs showing the dome superimposed over Manhattan. Barriers between fact and fantasy became blurred all the more by the exhibition sighting, since the depicted structure would have enclosed the MOMA building it was presented in. Through a *Dome Over Manhattan* the world-as-artefact becomes a world-as-artwork. Moreover, the-world-as-artefact falls under the hubris of

152 Alden Hatch, *Buckminster Fuller: At Home in the Universe* (New York: Hatch, 1974), 230.

human intention: the press release described *Dome* as a "controlled climate."[153] Latimer's terrarium responds to this statement by questioning who is controlling this climate, while Bataille might have added: by what means?

Two days after *Visionary Architecture* opened, the conflation between artefact and artwork came into effect when a smaller-scale biosphere was unveiled at Missouri Botanical Garden, on 1 October 1960. The dome was a landmark in the history of geodesic architecture, and the first to be used as a conservatory. Although not designed by Fuller, the architects Murphy and Mackey acknowledge "incorporating the principles of R. Buckminster Fuller" as "inventor of the geodesic system."[154]

The conservatory is a hybrid of Latimer's microcosmic terrarium and Fuller's planetary scale *Dome*. Inside an enclosed sphere a veritable ark of cultivated biodiversity uses the greenhouse effect to foster a tropical jungle simulacrum in temperate Missouri. Ironically, this ostensibly Closed Ecological System also featured the world's first completely air-conditioned greenhouse. The architects went so far as to trademark their design *Climatron* in order "to emphasize the climate-control technology of the greenhouse dome."[155]

This is how the demon escapes such seemingly Closed Ecological Systems, because controlling the climate internal to the sphere required a destabilisation of the planet's climate external to the sphere, via fossil fuel combustion to provide the energy for air-conditioning. Thus, the remainder of this equation is the fact that a mesocosm *Climatron* collectively induces an out-of-control climate in the macrocosm it exists within.

The Dire springs forth from this released demon, following a breadcrumb trail that leads all the way from the "controlled climate" delusion of *Climatron* and *Dome* to a mechanistic and managerial mindset of human relations to earth. In his 1969 *Operating Manual for Spaceship Earth* Fuller extends the vision of *Dome over Manhattan* to the entire planet, arguing that

> our spaceship is . . . a mechanical vehicle, just as is an automobile. If you own an automobile . . . you know that you're either going to have to keep the machine in good order or it's going to be in trouble and fail to function. We have not been seeing our Spaceship Earth as an integrally-designed machine which to be persistently successful must be comprehended and serviced in total.[156]

153 Elizabeth Shaw, *Visionary Architecture* Press Release (New York: New York Museum of Modern Art, 1960), 2.

154 Missouri Botanical Garden, "Climatron: Geodesic Dome Conservatory," *Missouri Botanical Garde*, accessed 16 June 2016, http://www.missouribotanicalgarden.org/gardens-gardening/our-garden/gardens-conservatories/conservatories/climatron.aspx.

155 Missouri Botanical Garden, *Climatron*.

156 Buckminster Fuller, *Operating Manual for Spaceship Earth* (Carbondale: Southern Illinois University Press, 1969), 16.

Compelled by fear and denial of the fundamental chaos of the cosmos, the Dire's worldview seeks to manage that which the Dour declares to be unmanageable. Yet, when all is said and done, no matter how desperate the situation, a dire mindset is ultimately answerable to the moment when the machine itself is not going to "keep . . . good order." Trouble and failure are as much embedded in the *modus operandi* of "our spaceship" as any notional ease or success. And what happens when the "mechanical vehicle" is uninterested in proprietary claims? Or, worse still, when the vehicle in question has always been owned by forces and processes in radical excess of any sovereign claims made by a lifeform that thinks it owns the vessel, but in fact only ever hitched a short ride?

Nor are Fuller's terms neutral: for spiderwort, the fact that the other three plant species "fail[ed] to function" inside Latimer's terrarium just meant more success for it. Nor is "good order" a recipe for success. J002E3's wayward orbit may spell a disturbing omen for an industrial civilisation predicated on periodicity and predictability, but had *The Moon* not bestowed such wayward orbit in its early genesis, then its massive tidal fluctuations would not have repeatedly stripped nutrients from mineral-rich dry surfaces into the oceans, providing sustenance fundamental to the watery origins of life on earth. Minerals which arrived by way of hundreds of millions of years of asteroid and comet collisions.

After all, is Chicxulub not part of "the machine" too? And where *on Earth* is Theia in this *Operating Manual for Spaceship earThia?* All aboard. Abhor nothing. This is a spaceship which has not only crashed multiple times over the course of history, but which was born of an inter-planetary crash itself. But this is precisely that which we have such trouble comprehending. As Timothy Morton puts it: "The current ecological disaster, which we only know about because of very sophisticated interdisciplinary science, has torn a giant hole in the fabric of our understanding."[157]

Fuller designed more ambitious devices and structures for material and energy scarcity over the decade following his Illinois dome home, culminating in the climate-controlled artificial ark of the *Montreal Biosphere* in 1967, again in collaboration with Sadao. On the one hand, his stated motivation reveals one element of the dire mindset: Fuller presciently recognised scarcities of certain materials and energy sources that could prove dire to his contemporary industrial society.

157 Timothy Morton, *The Ecological Thought* (Cambridge, Mass: Harvard University Press, 2012), 14.

On the other hand, his approach to combatting this perceived dire situation reveals a scaling up of his fantasy of human control from the *Dome over Manhattan* to the level of a *Spaceship Earth*, maintained and regulated in total via human expertise. In relation to the first global oil shortage, in 1973, Fuller declared that "there is no energy crisis, only a crisis of ignorance."[158]

In this way, Fuller revealed two faces of the Dire: because he was incapable of cracking open his anthropocentric scale and worldview he submitted to his sense of scarcity of resources as a disproportionately 'dire' problem. But then he coupled this with a managerial mindset completely lacking in humility when it came to grappling with such scarcity, or indeed any other 'mechanical trouble' aboard his planetary 'vehicle.'

Fuller's scaling-up of such control to a "Spaceship Earth . . . comprehended and serviced in total" came to fruition when he proposed the ethos of *Dome Over Manhattan* to the globe itself. In December 1971 – the year earth's net energy balance changed from negative to positive – he re-exhibited *Dome*, but this time under the new title *Save Our Cities*, for the *Save Our Planet* exhibition at the Whitney Museum in Manhattan. The same model photograph appears as exhibited in 1960, yet now with a top banner proclaiming "SAVE OUR PLANET" three times in capital letters, and a bottom banner reading "save our cities" in lower case. Unlike the 1960 MOMA exhibition, the site of this exhibition sat just outside *Dome's* proposed perimeter. And in stark contrast to 1960, Fuller's contribution was no longer a provocation from a radical outsider: this time he was commissioned by a multinational corporation, namely Olivetti.

In Fuller's managerial mindset, the quest to *Save Our Planet* begets technofix responses: from a city saved by a glass bubble, to a *Spaceship Earth* saved by being serviced "just as is an automobile." Yet any desired efficiency dividends for mediating in solar radiant energy can never square off. For philosopher Clive Hamilton, "grasping the scale of what is happening requires not only breaking the bubble but also making the cognitive leap to Earth System thinking,"[159] hence Bataille's precautionary principle about the interstellar scale of such energetic entanglements. For Timothy Morton, there are further breakages required to make this leap from faith to fidelity, after all, the unfolding rupture has "torn a giant hole in the fabric of our understanding."

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158 Buckminster Fuller, quoted in Victoria Vesna, "Introduction to Buckminster Fuller," *Buckminster Fuller Institute*, accessed 16 June 2016, https://bfi.org/about-fuller/biography/introduction-buckminster-fuller.

159 Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (Cambridge: Polity Press, 2017), 2.

In a walnutshell, a myopic worldview cannot encompass always excessive forces irrupting through the cosmos. Twenty years before Fuller's *Spaceship Earth* manifesto, Bataille had cautioned that

> an immense industrial network cannot be managed in the same way that one changes a tire . . . It expresses a circuit of cosmic energy on which it depends, which it cannot limit, and whose laws it cannot ignore without consequences. Woe to those who, to the very end, insist on regulating the movement that exceeds them with the narrow mind of the mechanic who changes a tire.[160]

Bataille's mechanic changing a tyre and Fuller's *Spaceship Earth,* serviced like a beloved automobile, are both expressions of potential relationships between "an immense industrial network," and the "circuit of cosmic energy" upon which it depends. Materials circulate within Latimer's terrarium, driven by solar energy. A circuit of chemical energy, produced by combusting fossil fuels, drove the *Climatron*'s air-conditioning, maintaining the climate within its bubble at the eventual cost of the climate without. It is woeful, in Bataille's sense, that Fuller chose automobile maintenance as his analogy for human control over the planet, given cars also express a circuit of fossil fuel energy that collectively scuttle the already precarious and capricious climate of *Spaceship Earth.*

Ironically, energy as a phenomenon is absent from the six *Save Our Planet* posters, which represented water, air, wilderness, wildlife, people, and cities. Energy, the only phenomenon that can simultaneously shape all six ecological concerns, was omitted. An omission all the more dire, given *Save Our Planet* appeared the year earth's energy balance went from negative to positive. Nascent ecological concerns were oblivious to how Fuller's vision had become both an urgent necessity and a hollow conceit, in light of Bataille's caution against "the narrow mind of the mechanic who changes a tire."

Thus, the real time flipping of the tortoise was obscured by worldviews oblivious to the oblivion unfolding all around, and instead focused on demarcating parts of the globe that could, at least in the popular imagination, be compartmentalised and controlled, providing bubbles of safety, as if it were Chaplin's plastic earth sphere. Moreover, the collective act of flipping the tortoise was also obscured by a myopic ignorance of a simple fact: a restricted economy is always a subset of Bataille's General Economy, by which he means an "economy at the scale of the universe."

Though energy entered the equation when the landmark findings on *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of*

160 Bataille, *The Accursed Share*, 25.

Mankind[161] were first presented, in the same year as the *Save our Planet* exhibition. The text was published the following year to contentious reception, even though the modelled consequences of exponential population and economic growth were offered in modestly non-conclusive academic terms:

> It is not known how much we can perturb the natural ecological balance of the earth without serious consequences. It is not known how much C02 or thermal pollution can be released without causing irreversible changes in the earth's climate.[162]

In keeping with truth being no stranger to fiction, the aptly titled *Universe Publishing* house that produced the book was located in Manhattan, just inside the perimeter of Fuller's proposed *Dome.* Although admirable in some ways, this was not a worldview that applied the by-laws of human constructs onto Bataille's immutable "Laws of General Economy," because of one difficult truth: any cosmology premised on a "natural ecological balance of the earth" fails to recognise that the cosmos only ever provides temporary states of balance amidst the changeability and consequences of the Court Jester and Red Queen dancing to their own drums, which we cannot even strive to hear, let alone comprehend. Meaning that despite their apparently forward-thinking intentions, both Fuller and *The Club of Rome* remained trapped in the category of those who "insist on regulating the movement that exceeds them with the narrow mind of the mechanic who changes a tire." Woe, indeed. Then to them. Now to us.

The Limits to Growth drew from the longest running continuous measurement of atmospheric carbon dioxide, commenced in March 1958 on Mauna Loa volcano in Hawaii. Comically, the report authors could also have simply looked to Hollywood that year. In February 1958, a month before climatologist Charles Keeling started tracking carbon dioxide from Mauna Loa, Hollywood director Frank Capra broadcast his educational film *Meteora: The Unchained Goddess* on national US television.

The episode was one of four Capra wrote and produced for The Bell Laboratory Science Series, which became mainstay documentaries for US classrooms throughout the 60s. In the conclusion to the hour long *Meteora* episode a character called Mr. Scientist explains to an actor playing a journalist:

> Even now, man may be unwittingly changing the world's climate through the waste products of his civilization. Due to our release through factories and automobiles every year of more than six billion tons of carbon dioxide, which helps air absorb heat from the sun, our atmosphere seems to be getting warmer.

161 Donella Meadows, *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (New York: Universe, 1972).
162 Meadows, *The Limits to Growth*, 80.

To which the journalist responds: "This is bad?"[163] A question that befits the absurdity of the collective response, which manifestly failed to improve, despite our unwitting alteration of the climate entering the popular imagination soon thereafter.

When Clark remarked in 2010 that "academic science, popular science writing and Hollywood cinema have all warmed to the idea of sudden threshold transitions in climate systems" he refers implicitly to the first mainstream film on topic: *The Day After Tomorrow*, from 2004.[164] The film brought the rapidity of "sudden threshold transitions" into popular culture through fable, rather than fidelity to the palaeoclimatological record. In keeping with Hollywood disaster conventions, the cautionary tale of human-induced abrupt climate change became subsumed beneath an incredulous plotline wherein weakening thermohaline circulation of the gulf stream induces a rapid-onset ice age.

Despite the fantastical science, the gulf stream has since shown signs of weakening, drawing the world-as-artwork unnervingly close to the world-as-artefact. This gulf stream, another inheritance from the closure of Panama, has undergone "sudden threshold transitions," though "sudden" here is akin to the earlier image of Panama closing over a handful of decades as synecdoche for the real closure, which took a few million years.

South Park parodied the film one year later, in 2005, in their episode *Two Days Before The Day After Tomorrow*.[165] The joke being that scientists were such scaremongers as to predict climatic change due to occur on the same day they begin to predict it. As a litmus test for how far popular culture has "warmed to the idea of" human-induced abrupt climate change since the mid-2000s, South Park clearly felt compelled to issue a rare *mea culpa* in 2018, in a double episode acknowledging that the satirists had vastly underestimated both intrinsic climatic precarity, as well as the propensity for existing anthropogenic forcing to unleash abrupt climate change.[166] With disastrous effects increasingly materialising all around them, panellists assemble on a TV show-within-the-show, to address "Should We Start To Worry?", where one panellist declares:

163 Frank Capra, "Meteora: The Unchained Goddess," *The Bell System Science Series*, episode 4, director Richard Carlson, aired National Broadcasting Corporation, 12 February 1958.

164 Roland Emmerich, director, *The Day After Tomorrow* (20th Century Studios, 2004), 35 mm.

165 Trey Parker, director, *South Park*, Season 9, episode 8, "Two Days Before The Day After Tomorrow," aired Comedy Central, 19 October 2005.

166 Trey Parker, director, *South Park*, Season 22, episode 6, "Time to Get Cereal," aired Comedy Central, 7 November 2018.

> I don't think there's any more room for not considering underestimating the importance of beginning to start the process of mulling over the conceptualisation of starting to worry. And the time to do it is . . . very soon.[167]

The comedians depict a society that has only gotten so far – petrified at the prospects, and unable to do anything other hold town hall forums titled "When Should I Start To Worry?"

To boot, such awakenings come more than half a century after Hollywood first brought anthropogenic climate change into classrooms across the US in the form of Capra's documentaries. This begs the question: how could Hollywood declare that "man may be unwittingly changing the world's climate" in 1958, only for the 'civilisation' in question to go about wittingly and willingly flipping the tortoise for six decades thereafter? Why did the tortoise still end up in front of us, on its back, with its belly baking in the hot sun?

The problem is, 'why' questions are slippery. They are Cheshire cats compared to 'how' questions. How the tortoise was flipped into this predicament is dead simple: the intoxicating ideology of a 'civilisation' bent on emancipating itself from earth's vicissitudes through modern conveniences, only for those involved to discover that "the waste products" of their civilisation had exposed them to the N-LSD and intrinsic precarity of the Earth System.

The answer to the 'why' question may however be found in two vastly different meanings of 'unwittingly': *without being aware*, that is without knowledge, and *unintentionally*, or without intent. Given how the vast majority of humanity neither intended to cause this rupture, nor actively contributed to it, it is the dearth of wit that speaks volumes as to why *on earth* this particular shift happened. But to unmask the role of unawareness in perpetuating a half century lapse between Hollywood disclosure of anthropogenic climate change, and acknowledgment of same, one must turn to what preoccupied this 'civilisation' so much that it turned a blind eye to the looming catastrophe caused by its own "waste products."

In another part of New York City, another group of schoolchildren were being shown a different film, featuring another turtle. Unlike the desert tortoise before us, this one was animated, anthropomorphised, and named Bert. Star of the 1952 Civil Defence Film *Duck and Cover*, Bert is less concerned with rupture on the temporal and spatial scale of earth and far more concerned with a distinctly smaller and more human threat.[168] The Cold War period and the mentality

167 Trey Parker, director, *South Park*, Season 22, episode 7, "Nobody Got Cereal?", aired Comedy Central, 14 November 2018.

168 Anthony Rizzo, director, *Duck and Cover* (Archer Productions, 1952), 16 mm.

it fostered were an antithesis to the nascent concerns about impending ecological crisis, saturating an entire generation's capacity for awareness of their own mortality with the immediate, concrete, politically definable threat of nuclear war.

Not only did this make for a compelling distraction from the more insidious destruction happening under the nose of this generation, it also spawned an entire genre of nursery rhyme propaganda that disseminated the fantasy of sheltering from a nuclear holocaust. When a nearby monkey explodes a stick of dynamite, Bert drops to the ground and retreats into the shelter of his shell. The film then shows New York City schoolchildren similarly ducking and covering while a voice-over instructs how to do likewise if an atom bomb drops out of the sky.

The hollowness of such a conceit of shelter against massive energetic forces extended well beyond the classroom. Fuller's *Dome* was also supposed to shield Manhattan against radioactive fallout, given its coveted status as a prime strike target. Just as *Duck and Cover* simply ignored that fact that neither a desk over a fragile human body nor the marvellous mechanics of a turtle's inbuilt protective shell would provide the slightest protection against a radioactive blast, so too did Fuller fail to mention why *Dome's* squat mushroom shape is in fact almost the exact size as Hiroshima's severe blast damage radius: a hemisphere 3.2 kilometres in diameter. Fuller's protective shield to "save our cities," even when scaled up to "SAVE OUR PLANET" as per his *Operating Manual for Spaceship Earth*, now appears as a ghost in the shell, a manifestation of a concrete fear: that of a bomb similar to the ones America chose to drop on Hiroshima, exploding over Manhattan. Suffice to say, *Dome* would have been as efficacious in protecting Manhattan as its "controlled climate"[169] would have been in fending off human-induced global heating.

Duck and Cover is typical of the Cold War mentality: a cheery nursery rhyme sung to collectively reassure a petrified society that there is a bubble, there is shelter, and civilisation will protect them. The political gaming of this period distracted world leaders everywhere from giving sufficient attention to the warning signs of an ecological crisis far more dangerous than any bomb. Instead, learning to live with the threat of annihilation meant singing nursery rhymes of safety and security that were all too easily transferred to the Warm War, when the Cold War ended. A warm war of protracted existential annihilation via human-induced climate change versus a cold war premised on the constant threat of instantaneous existential annihilation.

After all, as Kingsnorth and Hine reminds us in their *Uncivilisation* manifesto: "we were led to this point by the stories we have told ourselves – above all, by

169 Shaw, *Visionary Architecture*, 2.

the story of civilisation . . ."[170] How, then, can we learn to see the present tense through eyes of those contemporaries not distracted by threat of the Cold War? Eyes through which we can see how the tortoise before us got flipped – from Fuller's hubris of "seeing our Spaceship Earth" being "serviced in total," to Bataille's humility and understanding that an "immense industrial network" cannot be "managed in the same way that one changes a tire."

The answer again lies in Manhattan, the premise again lies in The Bomb, but the approach differs again, deviating into comedy. This time, a comedy of nuclear holocaust.

How I Yearned to Stop Worrying and Love the Abomination

> Cynicism, loss of spiritual values, two world wars, the communist disillusionment, psychoanalysis, has forced the 20th century writer to keep his hero uninvolved, detached, burdened with problems relating to life . . . If the modern world could be summed up with a single word it would be 'absurd.' The only truly creative response to this is the comic version of life.
> – Stanley Kubrick, handwritten note card (1962)[171]

> Just tell Stanley that New York does not see anything funny about the end of the world as we know it.
> – Message to Stanley Kubrick from unnamed US Government war official, via Mo Rothman of Columbia Studios (1963)[172]

Downtown from where Fuller's *Dome* would have hovered, towards the southern tip of Manhattan, lies the birthplace of Stanley Kubrick. Having grown up in the Bronx, then lived and worked in Greenwich Village, it was with reluctance that he quit the US altogether in 1961. So petrified was Kubrick about the prospects of a New York City nuclear attack that he planned to move in 1962 with his family to Perth, Australia, deeming the city far enough away from nuclear fallout.[173] Instead, temporary UK bases while making *Lolita* in 1961 to 1962, and *Dr. Strangelove: Or How I Learned to Stop Worrying and Love the Bomb*, in 1963 to 1964,

170 Kingsnorth and Hine, *Uncivilisation*, 10.

171 Stanley Kubrick, handwritten note card, Archive file SK/11/1/21, University of the Arts London, 1962.

172 Terry Southern, cited in Rob Ager, *The Essence of War: An in depth analysis of Stanley Kubrick's Dr. Strangelove*, 2015, 12, accessed 16 February 2021, http://www.collativelearning.com/downloadables/Dr%20Strangelove%20analysis%20-%20chapters%2001-04.pdf.

173 Mick Broderick, *Reconstructing Strangelove: Inside Stanley Kubrick's 'Nightmare Comedy'* (New York: Columbia University Press, 2017), 11.

became permanent when his family subsequently moved over, and Kubrick never again returned to the US.

Knowing no place lies out of the line of nuclear fire, Kubrick remained haunted by having relinquished his beloved Manhattan to sidestep an ever-present threat of nuclear holocaust. While the prospect remains close to home for every terrestrial organism on earth, Kubrick had the added proximity of the Manhattan Project, which was established downtown in 1942 and run from that location while Kubrick attended high school uptown between 1941 and 1945.

When he began work on *Dr. Strangelove* in 1960, it was his attempt to grapple with the existential predicament beholden to Cold War ideologies. As this stage it was a serious drama, whose truth kept making mockery of the fiction he attempted to draw from it. Kubrick found the gravity of the situation did not hold up to such earnestness, giving rise to his

> idea of doing it as a nightmare comedy came in the early weeks of working on the screenplay. I found that in trying to put meat on the bones and to imagine the scenes fully, one had to keep leaving out of it things which were either absurd or paradoxical, in order to keep it from being funny; and these things seemed to be close to the heart of the scenes in question.[174]

The "heart" he refers to is the Cold War doctrine of Mutually Assured Destruction (MAD), whereby multiple parties deter one another from using their respective nuclear arsenals by maintaining equal firepower and therefore mutualising the threat: in this instance it was USSR v US. Though in actuality, this doctrine adds up to the respective Self Assured Destruction (SAD) of both parties, since any detonation of the deterrent bombs would of course unfold in a scaled up version of Latimer's terrarium: in other words, *on earth*. Since the contamination of a nuclear attack on a targeted region of the globe inevitably circulates back in greater or lesser quantity to the nation state that launched an attack, we can safely state that SAD+SAD=MAD.

From this "modern world" which Kubrick summed up as "'absurd'" comes a comedy of such repute that even stalwart institutions like the American Film Institute voted it the "3rd Funniest American Movie of All Time"[175] in their '100 funniest American films of all time' compilation. The repute is uniquely twofold: sheer hilarity of the-end-of-the-world-as-it-currently-is, brought about by eviscerating the

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174 Stanley Kubrick, quoted in *Macmillan International Dictionary of Films and Filmmakers Volume 1*, ed. Christopher Lyon (New York: Firethorn Press, 1984), 126.

175 "3rd Funniest American Movie of All Time," *AFI'S 100 years . . . 100 laughs: The 100 Funniest American Movies Of All Time*, accessed 25 July 2024, https://www.afi.com/afis-100-years-100-laughs.

roll call of postwar US ideology, politics, sexuality, and culture. As *Guardian* film critic John Patterson remarks (while declaring it the 6th best comedy film of all time):

> There had been nothing in comedy like *Dr. Strangelove* ever before. All the gods before whom the America of the stolid, paranoid 50s had genuflected – the Bomb, the Pentagon, the National Security State, the President himself, Texan masculinity and the alleged Commie menace of water-fluoridation – went into the wood-chipper and never got the same respect ever again.[176]

In seeking the 'usual suspects' responsible for flipping the tortoise, there is no need to go further than this line up. A white American, male, managerial, military-industrial mindset so impervious to the conceit of hubris as to disregard Mr. Scientist's 1958 revelation that anthropogenic climate change is occurring in Capra's film. Or even to follow up on Mr. Scientist's answer to the journalist's query as to whether "this is bad?" A disdain all the more cognitively dissonant, given Mr. Scientist cannot help but equate human-induced climatic change with "the gods before whom the America of the stolid, paranoid 50s genuflected," declaring the consequences "in weather" to be akin to "not only dealing with forces of a far greater variety than even the atomic physicist encounters, but with life itself."[177]

Schoolchildren prescribed *Duck and Cover* nursery rhymes were presented with a hollow conceit for surviving an atomic blast, in the same way schoolchildren prescribed *Meteora* were presented with a *fait accompli* for already-induced climate change. Therein lies the relevance of *Dr. Strangelove* to the present tense. Unable to breach the inner sanctum of the military-industrial complex and its willingness to put the world to rights in defence of consumerist and capitalist ideologies that the complex required, Kubrick instead used comedy as catharsis for a petrified *zeitgeist* between similarly hapless civilians.

There were no windows for a proverbial Kubrick to throw pebbles at in *Dr. Strangelove*'s War Room (and thus no opportunity for him to attract the attention of the president locked inside). And our nightmare comedy likewise lacks windows for a proverbial Kubrick to throw pebbles at. Because the windowless room is designed to ignore thrown pebbles and withstand atomic blasts, courtesy of its triangular shape dug deep beneath the ground, providing contemporary rulers with a kind of inverted architectural kinship with historical and fictional tyrants like Tyrell or Queen Mary atop their societal pyramids.

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176 John Patterson, "Dr. Strangelove: No 6 Best Comedy Film of All Time," *The Guardian*, 18 October 2010, accessed 16 February 2021, https://www.theguardian.com/film/2010/oct/18/dr-strangelove-kubrick-comedy.

177 Capra, *Meteora*.

Barred from the inner sanctum for deciding about preventing or accentuating human-induced planetary scale cataclysm, Kubrick invites us into a fictitious parallel version of the War Room sanctum. We watch the US President telephone the Russian Premier, to inform him of the imminent unprovoked nuclear attack:

> Hello, Dimitri? . . . It's good that you're fine and I'm fine. I agree with you. It's great to be fine. [*Laughs*] Now then Dimitri. You know how we've always talked about the possibility of something going wrong with the bomb. The bomb, Dimitri. The hydrogen bomb. Well now what happened is . . .[178]

With Kubrick playing Court Jester to present us with chaos framed in humour, we laugh off the absurdity of how SAD+SAD=MAD inside this parody of the real-world sanctums at the very peak of the social limits to life. Thus revealing another dimension of how the tortoise got flipped: those excluded from inner sanctums of power, whether tyrannical or nominally democratic, have largely had to resign themselves to their powerlessness in the face of policy, and found themselves reduced to empty gestures of ducking and covering under a desk in the event of exploding bombs, or feebly protesting economic and power structures that drive the feedback loop of human-induced climate change. War Room-like enclosures are designed to be impervious to the concerns of lay citizenry, as are the ideologies that enshrine such power structures. Nor were the laughs cheap, in this case: the Cuban Missile Crisis had brought the world to the brink of nuclear war 15 months before the film's release in January 1964.

Guilt, and its relevance, are born of agency, and they die of it too. When the agency lies beneath, behind, above, or beyond us, the laughs come especially cheap. To the extent that, speaking of *Melancholia*, von Trier declared that "in a way, the film does have a happy ending,"[179] because it alleviates collective human guilt of having unleashed cataclysms that did not have to be. This film embraces the dour wholeheartedly in this way, proposing that all human action, whether positive or negative, is thoroughly belittled in the face of a random cosmic event that has no concept whatsoever of just or unjust, guilty or not guilty. The rogue planet Melancholia does not judge humanity. It ignores it, then destroys it.

However, the guilty pleasure of irrelevance is eviscerated when the agency lies firmly within human intention. Other genres imagine endings that are all the more dire, as they are rife with guilt. *Dr. Strangelove's* comedic approach to the end of the world is especially remarkable, given it was partly inspired by *The Day*

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178 Stanley Kubrick, director, *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (Columbia Pictures, 1964), cited in "Dr. Strangelove: A Continuity Transcript," *The Kubrick Site*, accessed 16 February 2021, http://www.visual-memory.co.uk/amk/doc/0055.html.

179 von Trier, *Melancholia* Press Kit, 2011.

the Earth Caught Fire, the 1961 film about earth's orbit being dislodged by hydrogen bomb testing, sending the planet on a collision course with the sun.[180] In such hands, the end of the world was no laughing matter, whether a guilt-less or guilt-ridden ride.

Melancholia heralds a "cataclysm upstream" that annihilates the entire planet, whereas *The Day the Earth Caught Fire* agonises over human forcing which pushes the planet's trajectory toward annihilation. But be it manslaughter from without or murder from within, the destruction is assured in either eventuality. An unassailable chasm spans the gulf between a guilt-less or guilt-ridden end of a world, but the consequences play out the same regardless.

Given the gravitas of the subject matter and the agency of the subject within it, *Dr. Strangelove* features no such happy ending. Although Kubrick did film a slapstick-like alternate ending where all the military personnel descend into a pie fight in the War Room, replete with faces completely covered in pie. However, the released version ends in a way that is unequivocal as regards the guilt of its protagonists, with all non-subterranean life being extinguished when the unprovoked attack by a mad US general unleashes the USSR's Doomsday Device, a series of self-automated nuclear detonations that reduce earth back to its Hadean origins, not unlike the state following earTheia's genesis. Perhaps the ultimate confluence of being petrified and becoming petrified, as the near-instantaneous annihilation of terrestrial life consigns one for all and all for none into the fossil record. In this reading, *Dr. Strangelove* is a stand in for those who take a dire mindset to the currently unfolding rupture, in that the Dire mistakenly tries to consider what is most definitely a form of 'long emergency' without discernible beginning, middle, or end, as if it were comparable to instantaneous binary catastrophes at the flick of a switch. As if the question were simply *to bomb or not to bomb . . .*

Leaving guilt aside, then, *Dr. Strangelove* is the film that comes closest to capturing the two states of petrification, in light of Joseph Meeker's study on *The Comedy of Survival*:

> Man's high moral ideals and glorified heroic poses are themselves largely based upon fantasy, and are likely to lead to misery or death for those who hold them. As comedy sees it, the important thing is to live and to encourage life even though it is probably meaningless to do so. If the survival of our species is trivial, then so is comedy.[181]

Appropriating the film as a proxy for the present tense, though, does beg the question of who precisely the "I" in the subtitle "*How I Learned to Stop Worrying*

180 Val Guest, director, *The Day the Earth Caught Fire* (British Lion Films, 1961), 35 mm.
181 Meeker, *The Comedy of Survival*, 13.

and Love the Bomb" stands for? It is evidently not Dr. Strangelove, the mad scientist who thrives on the doctrine of MAD, because a pivotal conjunction lies between his name and the subtitle: "*Dr. Strangelove: Or . . .*" Is the "I" perhaps Kubrick, telling us he has *Learned to Stop Worrying and Love the Bomb* through a comedy about tyrants who destroy civilisation and the biosphere?

No matter who the 'I' was originally intended to be, it now constitutes a 'we' that may learn to stop worrying and love the present tense, even if that present tense is one of an ever-imminent destruction of civilisation and the biosphere. This includes learning to love the scale of the crisis, alongside the woeful inadequacy of the response, a love that can only live amidst the sheer *Comedy of Survival*. In the film's finalé, 'we-are-all-one' becomes 'we-are-all-none' as the Doomsday Device springs into action, represented by stock footage of actual US atomic tests, while Vera Lynn's World War Two anthem play in the background, declaring that "we'll meet again", provided we

> Keep smiling through
> Just like you always do
> 'Til the blue skies
> Drive the dark clouds far away.[182]

It is apt that the idea of using the baselessly optimistic *We'll Meet Again* over the montage was suggested to Peter Sellers by Spike Milligan, a fellow comedian, collaborator, and friend whose World War Two active duty gave rise to his own prognosis that only comedy is commensurate with a modern world summed up by the word 'absurd.' Given the present tense is orders of magnitude more 'absurd' than the Cold War world, we must turn to the lay civilians who never sought to breach the inner sanctum of their respective societies, to understand how the postwar generation drifted towards a far more insidious *New World Coming* during the intervening years: years typified by mankind "unwittingly changing the world's climate through the waste products of his civilisation."

The answer again lies in New York City, the premise again lies in a bubble, the approach lies again in comedy. This time, of the dubious innocence of the "unwitting . . . civilisation" itself.

182 Ross Parker and Hughie Charles, *We'll Meet Again* (Michael Ross Limited, 1939).

The Show About Nothing Must Go On

> The longer the bomb is around without anything happening, the better the job that people do in psychologically denying its existence. It has become as abstract as the fact that we are all going to die someday, which we usually do an excellent job of denying. For this reason, most people have very little interest in nuclear war. It has become even less interesting as a problem than, say, city government, and the longer a nuclear event is postponed, the greater becomes the illusion that we are constantly building up security, like interest at the bank. As time goes on, the danger increases, I believe, because the thing becomes more and more remote in people's minds.
> – Stanley Kubrick, interview with Jeremy Bernstein (1966)[183]

A generic diner stands on Broadway, the street on which the Manhattan Project was established, and two kilometres north of where Fuller's *Dome* would have hovered. Its name beams onto the street frontage in large red emblazoned neon lights that run above its floor to ceiling glass windows. Otherwise unremarkable, Tom's Restaurant became famous as the real-world exterior location of the fictional Monk's Cafe in the 1990s sitcom *Seinfeld.*

Inside-Monk's-inside-Tom's (the interiors were actually filmed in-studio) the four main characters whiled away many an hour in what co-creators Larry David and Jerry Seinfeld termed a "show about nothing."[184] The two Jewish comedians are New Yorkers through and through – born and raised in Brooklyn, a generation later than Kubrick in the Bronx. Like Kubrick, New York culture remained a preoccupation throughout their lives, even though they, like Kubrick, quit the city: in their case, for Los Angeles. *Seinfeld* was even reported to have provided a lifeline for Kubrick's lifelong love of New York Jewish humour, with home-made videotapes of local US broadcasts posted weekly to England, so he could relish their riotous love affair with the Big Apple from afar.[185]

David and Seinfeld summarised the show's ethos as "no hugging, no learning"[186] – their characters never show empathy or compassion, and never learn from their mistakes. Instead, their characters repeatedly fall into folly, which

183 Stanley Kubrick, quoted in Jeremy Bernstein, "How About a Little Game?", *The New Yorker*, 5 November 1966, accessed 5 December 2015, https://www.newyorker.com/magazine/1966/11/12/how-about-a-little-game.

184 Larry David, quoted in Edward Kosner, "No Hugging, No Learning: The 'Seinfeld' Credo," *The Wall Street Journal*, 12 August 2016, accessed 16 February 2021, https://www.wsj.com/articles/no-hugging-no-learning-the-seinfeld-credo-1471032667.

185 Tim Cahill, "The Rolling Stone Interview: Stanley Kubrick in 1987," *Rolling Stone*, 7 March 2011, accessed 16 February 2021, https://www.rollingstone.com/movies/movie-news/the-rolling-stone-interview-stanley-kubrick-in-1987-90904.

186 David, quoted in Kosner, "No Hugging, No Learning."

they then dissect in Monk's Cafe. Proverbial storms-in-a-coffee-cup, played out between personalities ranging from narcissistic to nihilistic to neurotic and back again: selfish, superficial, facile, and oh-so-hilariously funny.

The sitcom reverberated in popular culture unlike any other since, and continues to resonate through *ad nauseam* reruns still syndicated 25 years after it ended. Not only because of its tenaciousness in shamelessly centring on such antiheroes, or encapsulating the 1990s *zeitgeist* for prosperous western liberal democracies. Life in that Big Apple shared none of the concerns espoused by Fuller's 1960 *Dome over Manhattan,* or even its 1971 *Save Our Cities* version. Nor did it share the concerns espoused by Kubrick's 1964 *Dr. Strangelove*, or even his observation about the intervening years, during which "the longer a nuclear event is postponed, the greater becomes the illusion that we are constantly building up security, like interest at the bank."[187]

In the fictional world of *Seinfeld* the only storms are those in a coffee cup: reflections beamed back to a society of itself, basking in its own bubble. Before I myself came of age to the "collapsing of multiple chronologies – of species history and geological times into our very own lifetimes,"[188] I came from an age delightfully oblivious to such petrification, relishing the delights of mining further comic layers of this entirely inward-looking fictional world by taping every single episode on VHS, pausing each and every advertising break in order to construct an archive for diving into, again and again. Trivial though this tidbit of trivia is, it is my springboard: one individual example of awakening from a sheltered worldview to a revelatory cosmology.

Monk's Cafe may have been fictional, but the physical location of its real-world exterior revealed a twist that juxtaposed it with something tellingly real. Tom's Restaurant occupies the entire street level of the Broadway and West 112th Street corner, above which all floors are closed to the public: no visitors or tours, with entry subject to US government security regulations. This is the premises of the Goddard Institute for Space Studies (GISS), a collaboration between the Earth Sciences Division of NASA's Goddard Space Flight Centre and the Columbia University Earth Institute.

Since its formation in 1961, GISS has conducted high level research on planetary change affecting our planet and our neighbours in the solar system. The research ranges in scale from the solar system over billions of years (such as unearthing ancient climates on Mars and Venus) to cycles of change that periodically effect

187 Kubrick, quoted in Bernstein, "How About a Little Game?"

188 Chakrabarty, "The Human Condition in the Anthropocene," 180–181.

vast regions of Earth (such as the El Niño Southern Oscillation), all the way through to relatively ephemeral changes produced by single volcanic eruptions.

Given the institute is part of NASA, it is unsurprising that the dozens of researchers working there had been concerned largely with phenomena occurring on spatiotemporal scales that far transcend the here or now. Following the appointment of James Hansen to Director in 1981, GISS refocused its attention back down onto earth. Originally an atmospheric physicist, Hansen's prior research had been comparative planetology between atmospheres on Venus and Earth, conducted at NASA from 1967 to 1980.

Over the course of those 13 years he discovered how Venus ended up with current surface temperatures of 400°C, even though some billions of years ago it had a vaguely earth-like composition and climate, replete with oceans and clouds made from water vapour, rather than the sulphur dioxide composition they have now. Hansen came to realise that the cumulative impact of contemporary industrial activity could be enough to push earth into runaway climate change that would take the planet on a long-term trajectory towards the same state as Venus. So, in 1980 he "resigned as principal investigator on our Venus experiment because a planet [earth] changing before our eyes is more interesting and important" as "its changes will affect all of humanity."[189]

The following year Hansen initiated this earth-ward redirection of focus, beginning with a study of US air temperatures between 1880 to 1980. By the mid-1980s he had amassed sufficient evidence to calculate that industrial activity was already changing the climate. On 23 June 1988 he gave the first high profile congressional testimony concerning this matter, delivered to the US Senate Energy and Natural Resources Committee. His testimony brought human-induced climate change into the public domain like nothing prior, declaring unequivocally that earth's climate was demonstrably changing, and the cause was accumulated greenhouse gasses from industrial activity. This may seem unremarkable, given Capra's declarations three decades prior in *Meteora*, however Hansen was concerned with the socio-political uptake of such revelations, whereas Capra eschewed such uptake.

Hansen's testimony ran front page on the following day's *New York Times*, with the heading "Global Warming Has Begun, Expert Tells Senate."[190] The Dire,

189 James Hansen, "Why I Must Speak out about Climate Change," paper presented at TED Conference, Longbeach, US, 28 February 2012, accessed 13 December 2015, https://www.ted.com/talks/james_hansen_why_i_must_speak_out_about_climate_change/transcript?language=en.

190 Philip Shabecoff, "Global Warming Has Begun, Expert Tells Senate," *The New York Times*, 24 June 1988, accessed 13 December 2015, http://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells- senate.html.

it would seem, had left the margins, and entered the mainstream. Only to encounter backlash from politicians and journalists that refused to recognise it for what it actually was, with one article standing out in particular. During the (notably mild) summer of 1989, the same summer that saw the premier of *Seinfeld*, science journalist Nicholas Wade wrote an op-ed piece, also published in the *New York Times*. Wade declared that 1988 had been a "a summer's heat wave" within the realm of "the climate's natural variability," and argued that Hansen had capitalised on this to mistakenly tell Congress that global warming had begun. Beyond this, Wade argued that "even another sweltering summer won't mean the greenhouse warming has begun" and thus that "crying wolf on greenhouse warming will not work."[191]

Wade's op-ed, "Crying Wolf in the Greenhouse", foregrounded Aesop's fable about *The Boy Who Cried Wolf*[192] to instil an instantly recognisable analogy for a false alarm. *Seinfeld* premiered on US television to massive success, and the seamless bubble of self that the show represented began to play out in the café beneath Hansen's facility. Little wonder that a society enraptured with comedy that shrank reality to literally create a show about nothing was primed for the denial of a dire demeanour. Hansen responded to Wade with his own op-ed piece, entitled *Wolf in the Greenhouse*. He used the same metaphor to acknowledge "the danger of crying wolf too soon" due to the fact that natural variability may mean that the general public cannot recognise climate change anecdotally.

Nevertheless, he closed his op-ed with the argument that "the time to cry wolf is here," due to the complexities arising when human values, systems, and failings are factored into the immutable biophysical laws governing the planet:

> A greater danger is to wait too long. The climate system has great inertia, so we have realised only part of the climate change that will be caused by gases we have added to the atmosphere. Add to this the inertia of the world's energy, economic and political systems, which will affect any plans to reduce greenhouse gas emissions.[193]

At long last, a sentiment mired in Fuller's scarcity ethos, but still open to Bataille's humility toward incessant excess, where human forcings are "only part of the

191 Nicholas Wade, "Crying Wolf in the Greenhouse," *The New York Times*, 3 July 1989, accessed 13 December 2015, http://www.nytimes.com/1989/07/03/opinion/the-editorial-notebook-crying-wolf-in-the-greenhouse.html.

192 Aesop, "The Boy Who Cried Wolf," in *Aesop's Fables: Timeless Moral Stories* (The Child's World, Inc., 2022).

193 James Hansen, "Wolf in the Greenhouse," *The New York Times*, 1 August 1989, accessed 13 December 2015, http://www.nytimes.com/1989/08/01/opinion/l-let-s-not-count-on-the-earth-to-heal-itself-wolf-in-the-greenhouse-972189.html.

climate change" that turn 'good' planets (good for us and our fellow inhabitants) into 'bad' planets, just as the once earth-like Venus became the present tense Venus. The universal sigh is now saddled with a human twist. The rupture is unleashed. Meanwhile "the world's energy, economic and political systems" wait to be reformed in response, with the managerial mindset of a Fuller proposed as the means for so doing. A society sufficiently narcissistic and inward-gazing to make *Seinfeld* a multi-million-dollar success fuelled the Dire, with its entirely human scale, to become the dominant posture for coaxing the demon of anthropogenic climate change back into the bottle: the bottle that this same society broke in the first place.

When I'm 1964

> I very deliberately tried to avoid the irresistible temptation of a lot of satire to level with the audience at some point and tell them what you really think . . . If you really want to communicate something, even if it's just an emotion or an attitude, let alone an idea, the least effective and least enjoyable way is directly. It only goes in about half an inch. But if you can get people to the point where they have to think a moment what it is you're getting at, and then discover it . . . the thrill of discovery goes right through the heart.
> – Stanley Kubrick, interview with Joseph Heller (1964)[194]

Seinfeld premiered at the height of that seemingly mild 1989 summer, on 5 July, two days after Wade's "Crying Wolf in the Greenhouse" op-ed. Having conceived the show in November 1988, David and Seinfeld wrote and produced the first season in the interim between Hansen's testimony and its incipient backlash: a backlash that roundly demonstrated the accuracy of Kubrick's 1964 statement about the ineffectiveness of direct communication. Despite reading the daily news over coffee each morning in Monk's Cafe, no mention is made over the sitcom's nine-season run of climate change, or even generic environmental change. Only the bleedingly obvious transition between television seasons that follow Spring, Summer, Winter, Autumn, or, nowadays: "Sprumer, Sumumn, Auter, Winting."[195]

The characters in Monk's cafe sat intoxicated with their coffee cup reflections, while Hansen and his GISS colleagues toiled away upstairs from the cafe's real-world exterior unearthing the devastating consequences of climate change – both across the inconceivable expanses of geological time and in the "fierce

194 Stanley Kubrick, quoted in "Stanley Kubrick and Joseph Heller: A Conversation, 1964," in *The Stanley Kubrick Archives*, ed. Alison Castle (Cologne: Taschen, 2005), 364.
195 Fallot, *Golab Waminrg* poster.

urgency of now."[196] That a comedy should play out on street level while the unfolding rupture is revealed upstairs shatters the idea that comedy = tragedy + time, because the "inconvenient truth"[197] that was unearthed upstairs, while those downstairs limited their horizon of interest to playing reassuring fictions, was that there would be no time for this particular tragedy to transmute into comedy.

The fiction really falls apart, however, when we turn our attention to an even more foreboding phenomenon that occurred over this same timeframe and was revealed three years after *Seinfeld* finally drew to a close. It is a phenomenon literally obscured by clouds, foreshadowing a *bona fide* crisis, rather than all other so-called 'crises' which compete for the human-scaled attention of a dire demeanour: terrorism, war, sovereign debt, pestilence, yada yada. While the halcyon *Seinfeld* era might have basked in a self-awarded reprieve from engaging with or recognising the extreme that would soon after become the New Normal, the same cannot be said for this other phenomenon, because it continues, and continues to be obscured by clouds even today.

The key to this phenomenon once again lies in New York City, because the extent of its global presence was unearthed through events occurring at another site in downtown Manhattan. This unearthing could be called a side-effect, resulting from an event that set the tone for the twenty-first-and-last century: a discovery made by means of tragedy. Immediately following the 11 September terrorist attacks in 2001, all flights over the US were grounded for 48 hours. Such a closure had never happened before in aviation history. Air traffic pollutes unlike any other form of human transport, but ironically, aircraft contrails also mask the effects of that pollution, by creating a heat shield that prevents us from reading the true temperature of the atmosphere from the surface of the planet.[198]

With US skies temporarily clear of all aircraft, climate scientists grabbed an otherwise unobtainable chance to disentangle signal from noise, by unmasking the masking caused by aircraft contrails. The signal is the rate, velocity, and trajectory of intrinsic climatic change. The noise is all interference caused by other anthropogenic forcings, particularly contrails. The global dimming caused by these trails could be measured within the 48-hour flight ban, because they evaporate within hours. While the human crisis of the attacks unfolded below, scientists pierced

196 Martin Luther King Jr., "I Have a Dream," transcript of speech delivered at the Lincoln Memorial, Washington, DC, 28 August 1963, accessed 6 May 2019, https://www.americanrhetoric.com/speeches/mlkihaveadream.htm

197 Al Gore, *An Inconvenient Truth*, director, Davis Guggenheim (Paramount Classics, 2006), DVD.

198 D. Lee et al., "Transport Impacts on Atmosphere and Climate: Aviation," *Atmospheric Environment* 44, no. 37 (2010): 4678–4734.

through the clouds and revealed that surface air temperatures over the US increased an average of 1°C in those 48 hours.[199] Crudely speaking, this means that the terrestrial US climate is actually already 1°C warmer that it appears at surface level, masked as it is by the shielding effect of contrails.

While this figure will differ markedly for regions that have much less air traffic, it still reveals how the warming that existed in 2001 was already much closer to exceeding the nominal guardrail of limiting global average temperatures to 2°C relative to pre-industrial levels. This was the original target set by the United Nations in concert with the usual suspects of global diplomatic negotiations. The figure was revised down in 2018, to state that 1.5°C of increase was actually the maximum that would not precipitate runaway climate change. It is clear that we require the most minimal interference possible in order to determine actual-versus-apparent warming, and yet it was already revealed in 2001 that we are massively interfering with the signal, making the actual extent of the crisis opaque. What point is there then in restraining the existing world order to stay within the 1.5°C guardrail if we may already be committed to exceeding it due to the *existing momentum* of historical emissions? Or, rather what point is there in believing the dire demeanour of trust in human-scale responses will provide the mechanisms, as well as the motivation, to steer a *Spaceship Earth*?

The meteorological measurements taken during the post-September 11 flight ban not only greatly exceeded expectations of how much warming was being masked, they also revealed how responses to ecological crisis are muddled in Clark's "conditions of unknowability." Conditions, it turns out, that we have been labouring under for some time, at least since global industrial activity began masking the true extent of anthropogenic climate change with global dimming caused by sulphur dioxide (aka pollution) over the 1940s and 1950s. Following the rise of Western environmentalism in the 1960s, legislation and policy were introduced to reduce pollution, which lead to a discernible increase in average global temperatures, now that the sulphur clouds of the prior decades were curbed.

Even the very recent knowability of the true extent of contrail masking is retrospective, in that the delay between cause and observable effect means we cannot possess such insight about the entanglements that play out in the present. The epistemological difficulty of disentangling signal from noise has long pervaded reconstructions of historical climates, and nowadays grows even more complex as increasing noise masks the muted signal all around. Nowadays, the difficulty of disentangling signal from noise carries as much socio-cultural baggage as the

199 David Travis, Andrew Carleton, and Ryan Lauritsen, "Contrails Reduce Daily Temperature Range," *Nature* 418 (2002): 601.

notional separation of humans from nature. Moreover, such lines of inquiry open portals to N-LSD whether we want to look through them or not, to a perspective where we see how the chaos and complexity of the World Turtle reigns alongside the dead simple causality of the greenhouse effect.

Smoke and mirrors obscure such phenomena behind clouds – whether the actual heat shield of air pollution causing global dimming, or the cultural imaginary that could celebrate a Fuller's *Dome* offering an illusory shield against nuclear catastrophe and climate change. Direct observation, like Kubrick's direct communication, only penetrates the proverbial half an inch. The phenomena in question are in fact far more easily observed in Latimer's terrarium-as-microcosm, which opened back up to the planet-as-macrocosm only once, when he opened and watered it for the last time in 1972.

When he did so, he not only briefly turned the Closed Ecological System into an Open Ecological System, he also reset the energy balance between the glass sphere interior and exterior, as the heat built up within was able to escape much more readily through the opened cork hole than the glass. This reset happened in Year 1 of the *New World Coming*, when earth entered net positive energy balance. A half century later, a search of utter desperation is underway for any means to uncork the excess heat of our planetary sphere and dispel it beyond earth's outer atmosphere.

Latimer's terrarium was unveiled in 2013 when he sent a photograph to BBC Radio 4's *Gardeners' Question Time* to ask them if it was "of scientific or horticultural interest."[200] So began its worldwide fame, being the oldest known terrarium in existence. Now 89, Latimer plans to bequeath it to his children when he dies. While the cork remains steadfast and life continues on within his Closed Ecological System, the genie is well and truly out of the bottle for the biosphere it is contained in. In today's *post*cautionary tale an important *pre*cautionary principle passed by the by unheeded.

The Simpson's Movie satirised this cautionary tale of being able to place civilisation so-called under a bubble: instead of protecting 'civilisation' against the elements, this bubble was designed to protect the biosphere against one particular example of that dubious civilisation. Having incurred one too many breaches of the Environmental Protection Act, the town of Springfield is encased in a giant bubble that resembles *Dome over Manhattan*, although the bubble seals the town at the surface of the earth, making it much more like Latimer's terrarium. Within the satire lies an earnest message conveyed by Grandpa Simpson when he cries

200 Latimer, "Sealed Bottle Garden."

out "Eeepaa! Eeepaa! Eeepaa!"[201] over and over again. The town claims he has had an episode of insanity, whereas the film later reveals that he was prophetically spelling out "EPA!": the Environmental Protection Agency acronym.

In this way, the movie unsubtly promotes the main normative mechanism for preventing the demon from escaping further, through regulatory bodies that possess state-of-emergency powers to encase regions of the globe in giant glass bubbles. An Environmentally Destructive Civilisation erects an Environmental Protection Agency. The "story of civilisation" thrives on its gospel, to "first set demons at large and then, somehow, become smart enough to control them."[202]

The make-believe world of *The Simpson's Movie* juxtaposed with Fuller's dome demonstrates how the "story of civilisation" is premised on building bubbles, whether it is bubbles that protect us, or bubbles to contain our demons . . . or, indeed, bubbles to contain the "waste products" of human civilisation that *Meteora* referred to in 1958. Three months after *Meteora* was broadcast, the US left behind the last of its "waste products" in the Pacific Ocean on 6 May 1958, in the form of the Cactus nuclear test crater on Enewetak atoll. Over the preceding 12 years, the US had created 67 such craters across Bikini and Enewetak atolls in the Marshall Islands, courtesy of their atomic and hydrogen bomb tests.

Cactus held a dubious distinction – since it was here that the US combined all the surrounding nuclear waste and buried it inside the crater, sealing it in 1980 with a 46 centimetre thick concrete dome, 115 metres in diameter, creating what they called Cactus Dome, or what local Marshallese Islanders less affectionally termed The Tomb. Nowadays, the rising sees lap at the dome edge, and, when eventually inundated, the contents will spill out through the oceans, dispersing the radiation across ocean currents for an unfathomable number of years.

The Dire is a demeanour that builds bubbles and sings nursery rhymes about shelter. It is not that this demeanour fails to acknowledge the rupture, but that it truly fails to recognise its extent and accept the beyond-human scales of time and space within which it is occurring. The Dire reacts in prevacation, terror-induced procrastination and slow or outright denial. It seeks urgent fixes for problems that will already persist into the unimaginable scales of geological time and promises of safe haven during ruptures from which there can be no shelter.

Should the Tomb on Enewetak atoll open, there will be no shelter or containment that can prevent the demons inside from running their course. Yet the Dire still believes in containment and haven. Whether *Melancholia's* cage of sticks to sit in while the world ends, Fuller's *Dome over Manhattan*, or the notion that

201 David Silverman, director, *The Simpson's Movie* (20th Century Fox, 2007), 35 mm.
202 Berry, *Standing by Words*, 65.

either a schoolchild's desk or a 46-centimetre-thick concrete dome can protect us from radiation, the dire demeanour refutes the blank truth that the civilisation that caused that cataclysm will not exist for long enough to the see the consequences of its actions.

Contrary to all the cold comfort of Bataille, the dour "prophet of open and complex systems,"[203] the dire demeanour seeks a world of Closed Ecological Systems, rather than the open book that is the cosmos, and a world of simplified systems, rather than the complexity of the cosmos itself. With closure and simplicity comes hubris, a hubris that mistakes the drowning nuclear waste repository for a problem that can be regulated, at least according to the story they tell in "the bubble, [which] it turns out, is where we have been living all the while," where it turns out that "the bubble is civilisation."[204]

Fig. 9: Charlie Chaplin, *The Great Dictator* (United Artists, 1940).

203 Clark, *Inhuman Nature*, 33.
204 Kingsnorth and Hine, *Uncivilisation*, 7.